Certified Environmental Management Systems for Agriculture, Crop Year 2002

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Introduction

The vision of the Certified Environmental Systems for Agriculture (CEMSA) is to enable agricultural producers to become better managers. The Iowa Soybean Association (ISA) believes most producers desire to be the best possible managers both from a financial and environmental basis. The objective of CEMSA is to provide both information and a formalized framework to enable producers to select and evaluate best practices for application on their specific farming operation. The Integrated Farm and Livestock Management (IFLM) Demonstration Program funding for this project was to demonstrate and evaluate the use of Environmental Management System (EMS) with five to ten producers.

Status of Project Activities as of December 31, 2002

ISA staff has facilitated three group meetings with the 10 participating growers to develop EMS proto-types. Each grower is developing an individualized EMS plan. Each is at a slightly different stage in plan development. ISA staff is now assisting each of the participants one-on-one to complete the EMS development process. To assist with proto-type development, ISA staff developed a variety of worksheets and planning aids. Such tools relate to the plan steps and correspond with contractual requirements of the US Department of Agriculture (USDA).

The following chart depicts the overall series of steps involved with EMS design and identifies the current status and projected completion for the initial proto-type EMS participants.

EMS Design and Development Process Steps	Participants	Status
User defining scope of their EMS	10	Completed 12/02
Identification of aspects and environmental impacts of their operation.	10	Completed 12/02
Evaluation of pertinent legal, regulatory or other requirements pertaining to the scope identified previously.	6 4 in progress	Completed 12/02 Projected 02/03
Assessment of significance enabling user to prioritize aspects and impacts their system will address.	6 4 in progress	Completed Projected 02/03
Preparation of an environmental policy, providing overarching principles guiding EMS use.	6 in progress	Projected 02/03
Setting objectives and targets and identifying specific actions the user will take.	1 in progress	Projected 02/03
Establishment of programs with timelines and procedures for monitoring progress and making adjustments.	0 in progress	Projected 03/03

ISA staff coordinated with Iowa Waste Reduction Center, who is now under contract to develop the CEMSA Implementation Manual. Lessons learned and information gleaned during the proto-type development process are contributing to the manual development.

In addition to the above, plans and materials were prepared to form the next group(s) for CEMSA plan development, hopefully to start in March 2003. Also, ISA staff coordinated with Dr. William Batchelor, Iowa State University, to initiate development of a user interface/decision support tool for CEMSA.

Included with this report is the text of following publications:

- Draft Fact Sheet*: What is an Environmental Management System?*
- *Certified Environmental Management Systems for Agriculture (CEMSA)*
- *Commonly asked Questions about CEMSA*
- *Outline of Four CEMSA Workshops*
- *Reasons for Farmer Participation in CEMSA*
- *Pledge to participate in the ISA's CEMSA project*
- *Iowa Soybean Association's Environmental Program*

Draft Fact Sheet: *What is an Environmental Management System?*

To begin to understand an environmental management system, you must first know what is a management system. A management system is the movement of information within an organization to facilitate decision-making and efficient use of resources. An environmental

management system then, is a method of managing environmental issues that have a significant impact over which you have some control. An Environmental Management System (EMS) provides a systematic approach to continual improvement based on an evaluation of the agricultural operation and the identification of measures to enhance environmental performance (or reduce harm). This system allows the farmer to consider both legal requirements and economic stresses while customizing it to reflect his unique values.

The elements of an environmental management system fall into a plan-do-check-act cycle. The Iowa Soybean Association (ISA), Certified Environmental Management System for Agriculture (CEMSA) provides a framework to design and develop an agriculturally based EMS. The design protocol ISA is using is based upon the ISO 14001 EMS framework. ISO 14000 is a series of voluntary international standards covering environmental management tools and systems developed by the International Organization for Standardization (ISO). The intent of the ISO standards is to provide all industries with a structure for developing and using EMS. The first standard in the series, ISO 14001, specifically provides the overall framework to establish an EMS. ISA's CEMSA mirrors the standard's implementation steps and is illustrated by the following chart.

EMS Cycle	CEMSA Steps	ISO 14001 Specifications
Plan	Determine Scope of Plan	
	Identify Aspects and Impacts	4.3.1 Environmental Aspects
	Identify Legal, Regulatory, and Other Requirements	4.3.2 Legal and Other Requirements
	Determine Significance	4.3.1 Environmental Aspects
	Write Environmental Policy	4.2 Environmental Policy
	Perform Gap Analysis	
	Create Objectives and Targets	4.3.3 Objectives and Targets
	Develop Programs	4.3.4 Environmental Management Programs
Do	Implement Programs	4.4.1 Structure and Responsibility 4.4.2 Training, Awareness, and Competence 4.4.3 Communication 4.4.4 EMS Documentation 4.4.5 Document Control 4.4.6 Operational Control 4.4.7 Emergency Preparedness and Response
Check	On Farm Network	4.5.1 Monitoring and Measurement 4.5.2 Nonconformance and Corrective and Preventative Action 4.5.3 Records 4.5.4 EMS Audit
Act	Yearly Desk Audit	4.6 Management Review

Included in this cycle are the steps to implement a system that will provide the increased efficiency and procedure to prioritize actions to achieve improved environmental performance. Monitoring and measuring is part of the system and helps demonstrate when actions are effective and when an objective is reached.

As you implement an EMS, you will perform the following functions of the plan-do-check-act cycle:

Plan:

- Environmental Policy
- Identify Environmental Aspects
- Define Environmental Impacts (resulting from Aspects)
- Develop system to prioritize environmental impacts (i.e., significant environmental impacts)
- Identify legal requirements (and other if important to company of community)
- Document objectives and targets to manage the aspects with significant impacts
- Establish and maintain a program and a timeframe to achieve these objectives and targets

Do:

- Assign responsibility for the system
- Identify training needs for personnel and contractors who could impact the environment
- Internal and external communication
- Document the systems elements and make sure it is current, controlled and reflects what you really do.
- Develop procedures to ensure that measures necessary to achieve objectives and targets are implemented consistently.
- Identify, review, and revise potential and real emergency situations for prevention and mitigation.

Check:

- Monitor operations with potential impacts
- Record performance and conformance of system
- Calibrate monitoring equipment
- Evaluate compliance with environmental regulations
- Investigate nonconformance
- Mitigate impacts
- Initiate preventive action
- Record resulting procedural changes
- Have records identifiable, retrievable, and protected from damage

Act/Review:

- Management Review – review the EMS to ensure it is adequate and effective
- Address possible changes needed to continue to improve
- Begin the cycle again for continual improvement

A well designed EMS can:

1. Help an organization identify and catalogue all of its environmental risks and impacts (not just those regulated by law.)
2. Help set criteria to prioritize those risks and impacts; and
3. Help an organization systematically apply greater management control to the risk and impacts it deems most important, with the goal of reducing them to the minimum extent practical.

As stated in Environmental Management Systems for Iowa Businesses: A Guide to Value-Added Design and Implementation, "For true and lasting business value, the important decision is how an organization chooses to design and implement its EMS, not whether it is certified to one plan or another." The goal of CEMSA is to provide an EMS that adds environmental performance and sustainable business practices to farming. Under one management structure, conservation practices, agricultural efficiency, stewardship and community interests can be merged to produce a holistic method of prioritizing actions to enhance agricultures' environmental performance.

Sources:

Applied Quality Systems, Inc. 1996 36 Hour ISO 14000 Certified Lead Auditor Rev. G Pages Part C page 9

NSW Agriculture and environmental management systems. Gareth Adcock, Environmental Management Systems Officer, Wagga Wagga. July 2002. Accessed from the World Wide Web on Dec 10, 2002 at http://www.agric.nsw.gov.au/reader /14752.

Environmental Management Systems for Iowa Businesses: A Guide to Value-Added Design and Implementation. May 2001. Amethyst Team. Page 12.

Certified Environmental Management Systems for Agriculture (CEMSA)
A program offered by the Iowa Soybean Association

Certified Environmental Management Systems for Agriculture (CEMSA) is a three-year project to implement an environmental management system or EMS, which is practical and feasible for use in a farming operation. The agricultural system is based on the ISO 14001 EMS that is well known in industrial settings.

An EMS helps define a farm's environmental policy. This policy guides a farmer through planning, implementing, evaluating and reviewing business decisions that affect the environment. EMS provides a way to evaluate existing environmental risks on a farm. Once risks are identified, they are prioritized and an action plan is developed to address the risks. A custom-made EMS plan seeks to lessen possible detrimental environmental impacts related to a farm's inputs, production processes and outputs.

Many Iowa farmers already have sound environmental stewardship practices in place. The EMS plan documents positive, proactive actions being taken on a farm. Because of improved management efficiencies, EMS may also help reduce the cost of inputs such as fertilizers, feed, pesticides and energy.

Ten Iowa farmers participated in a pilot EMS writing process. They designed and refined EMS into a system that could be applied to their individual farms. The EMS process includes a series of group work sessions, individual on-farm visits and each participant's investment of time and energy. Up to 150 farmers are expected to participate in CEMSA.

CEMSA is a program supported by the Iowa Soybean Promotion Board and the Iowa Department of Agriculture and Land Stewardship, in addition to a cooperative agreement with the USDA Natural Resources Conservation Service. Other CEMSA partners include the Illinois Soybean Checkoff Board, Iowa State University and the Iowa Waste Reduction Center at the University of Northern Iowa.

ISA believes a successful CEMSA program can be used to help guide future environmental regulations. CEMSA will also prepare participants for existing and potential federal conservation programs. Farmers with proof of a proactive environmental program in place may qualify for government conservation incentive payments.

The CEMSA project will explore options available for farmers interested in becoming ISO 14001 certified. Certification by a third party may assist farms interested in niche markets, or lowering insurance costs.

Commonly Asked Questions about CEMSA

What is CEMSA?
It is a three-year project to develop an Environmental Management System (EMS) for agriculture. The project is based upon the ISO 14001 Environmental Management System. It will involve up to 150 growers and is funded through local, state and federal sources.

What will CEMSA do?
CEMSA will assist producers with incorporating environmental performance objectives into the business of farming. This is accomplished by implementing a feasible management system for production agriculture that documents and demonstrates measurable environmental quality improvements. CEMSA is designed to assist farmers in voluntarily adopting certifiable conservation plans. The CEMSA project will also explore options available to farmers interested in becoming ISO 14001 certified.

What is ISO 14001?
ISO stands for International Organization for Standardization. It is an internationally recognized management system. The 14000 series addresses voluntary international standards on environmental management tools and systems. ISO 14001, known as *Environmental Management Systems – Specifications with Guidance for Use*, is the first standard in the 14000 series that applies to all types of production regardless of size, scope or location.

What does an Environmental Management System (EMS) include?
Overall, effective management systems address such things as policy and objectives, responsibilities, documentation, ongoing training, records, document control procedures, internal reviews, how to correct problems and continual improvement. In addition, EMS requires a farm business to identify and manage significant environmental impacts of its activities, products or services.

Why participate in CEMSA?
The public perception of agriculture is changing and it is clear that farmers are under increasing pressure to improve environment performance. A CEMSA plan will allow farmers to measure and document the actions they take to safeguard their natural resources.

What benefits are there to CEMSA?
Participants receive expert advice for their individual on-farm environmental issues. A thorough review of existing environmental management will allow participants the opportunity to make improvements and capture efficiencies that could improve a farmer's bottom line. Another benefit to CEMSA is access to cutting edge environmental management that will help qualify a farm for participation in conservation programs.

Why might a farmer consider participating in CEMSA now?
Now, more than ever, farmers need the ability to prove that the management systems they use address environmental objectives. Farmers may also capture untapped management efficiency by looking at the performance of their management systems.

Outline of Four CEMSA Workshops

Farmers interested in CEMSA attend an overview meeting. At this meeting, ISA defines EMS, explains the potential benefits and gathers feedback. Those interested in participating in CEMSA agree to attend four educational workshops.

First Workshop
Define the scope of your EMS - what different parts of your operation will be included such as owned vs. rented land, crops vs. livestock, individual fields vs. the entire farmstead. Identify the environmental aspects and impacts of your operation - those actions that can or do affect the environment and how they affect it.

Second Workshop
ISA will help determine the legal and regulatory requirements that pertain to your operation. Discuss and rate the significance of your impacts that pose the greatest risk to environmental quality.

Third Workshop
Discuss how to focus on the most significant impacts. Write an environmental policy for your operation. This step is a necessary component for certification. Identify the objectives and targets you will work towards and specific actions necessary to change the most significant impacts.

Fourth Workshop
Refine objectives and targets - set measurable, attainable and quantifiable goals; and set a reasonable timeline for change. Assemble your plan. Review what you have done and discuss how to use your EMS for continual improvement.

The ISA environmental staff will also spend time at your farm, as necessary, to help you identify the environmental impacts of your operation, and help determine what changes can be implemented to lessen that impact.

Comprehensive nutrient management plans, another ISA environmental initiative, may be a component in an EMS plan. EMS takes the nutrient management plans a step further by looking at how improvements will be measured.

Reasons for farmer participation in CEMSA

Ten Iowa farmers participated in a pilot EMS writing process. They designed and refined EMS into a system that could be applied to their individual farms. Here are some of the reasons why they are participating in the program.

A desire to do the best job of protecting and saving their farm's soil.

A desire to improve farm management and a belief the EMS plan will add to their quality management program.

An EMS plan could help achieve the goal of passing a more sustainable farm to the next generation.

To communicate to others that all feasible environmental measures are already being done.

To participate in a successful program that could be expanded to other operations within the same watershed.

A belief there is potential for a premium for being ISO 14001 certified.

A hope that CEMSA will keep the farm operation in compliance and qualify for new Farm Bill conservation programs.

Once EMS plans are finished, participants will need to implement any actions and procedures that would be a benefit economically and environmentally on their individual operations. The EMS plans will be reviewed on a yearly basis to update changes in the operations. There will also be a continuous evaluation of the plans to see how effective they are, how well they are followed, and what economic and environmental improvements are seen.

Pledge to participate in the Iowa Soybean Association's CEMSA pilot project

This project will help you to review your management structure so that environmental concerns are addressed in your decision-making process. It will also help you determine specific actions that can be taken to improve the environmental impact of your operation. You develop your EMS so you have control over what is included and what recommendations are made, therefore, you will not be required to take any actions you do not agree with. ISA's hope is that this project will provide you with a way to make environmental improvements that will positively affect your bottom line.

A CEMSA participant pledges to:

- Attend four workshops aimed at developing an EMS for your operation.
- Provide the necessary information for development of your EMS.
- Demonstrate a willingness to implement your EMS.
- Understand that this is a pilot project and procedures and timelines may be changed as the project evolves.
- Provide feedback, during and after the project, on successes and/or failures of the project.

The Iowa Soybean Association pledges to:

- Provide participants with the necessary training and tools to develop an effective EMS.
- Provide or procure the expertise needed to evaluate areas for environmental impact and to make recommendations.
- Ensure your EMS plan is sufficient for ISO 14001 registration, if desired, and participation in conservation programs.
- Help evaluate costs of obtaining ISO 14001 registration.
- Provide participants with technical support from ISA's Environmental and Production staff.
- Continue to provide growers with feedback and support after EMS plans are developed.

Iowa Soybean Association's Environmental Program

Vision – To be a credible provider of environmental information and programs empowering farmers to improve agronomic and environmental performance.

Mission – To deliver innovative projects providing farmers with service and support to meet agronomic and environmental objectives.

ISA is motivated to achieve environmental goals for these reasons:

- Farmers have concerns about interactions between farming and the environment.
- Farmers address concerns through gaining a clear understanding of their resources, evaluating performance of production technologies, using information to increase management efficiency, lowering risk liabilities and capturing new knowledge with data and research.
- Environmental information and service adding value for farmers and others is needed and is likely to increase in importance in the future.

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